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With the Author's Compliments

On the Financial Relations between the
London Hospitals and their Affiliated
Medical Schools; And the Bearing of
these Relations on Medical Education:
By HENRY MORRIS.

BEING THE ANNUAL ORATION OF THE MEDICAL SOCIETY OF LONDON,
DELIVERED MAY 15, 1905



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BY

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UNTIL the last decade or so the medical schools in London were practically self-supporting. Year by year, however, the progress of medical sciences, the addition of fresh subjects of study, and the introduction of more exact methods of demonstration into medical teaching, have added to the expense of medical education. At length, despite the increasing personal self sacrifices of the teachers, it was found that the schools were making annual deficits, and that it was no longer possible for them to continue their work without assistance, in one form or another, from the funds of their respective hospitals. Two schemes were put forward for relieving the schools and the hospitals of this burdensome expenditure ; one a self-supporting amalgamation scheme ; the other the establishment, by an appeal to the public for funds, of an Institute of Medical Sciences in connection with the University of London. Meanwhile, questions were raised as to the justifiability of applying funds given to the hospitals to the purposes of the medical schools attached thereto.

When, in accepting the invitation of the Council of the Medical Society to deliver the annual oration, I proposed as my subject, "The Financial Relations between the London Hospitals and their Medical Schools," there had been, so far as I was aware, no rumour of the appointment by the President of King Edward's Hospital Fund for London, of the "Medical Schools Committee." As this Committee, consisting of Sir Edward Fry as Chairman, Lord Welby, and the Bishop of Stepney have made their report, and, as the information contained therein is far more complete than I could otherwise have obtained, I shall, in addressing you this evening, constantly allude to the Report itself, and to the evidence on which the Report is based.

The terms of reference and instruction to the Committee were the following:—

"To consider and report—

"(1) Whether any, and if any how much, money given or subscribed for the relief of the sick poor to the twelve London hospitals having medical schools is contributed, directly or indirectly, by those hospitals, or any of them, for the maintenance of medical education.

"(2) Whether any direct or indirect return for such contributions (if any) is received by the hospitals from their medical schools, and, if so, whether such return is equivalent to the amount of the contributions.

"(3) Whether, in the event of the Committee finding that any hospital contributes to its medical school a sum in excess of the return it receives from the medical school, there are any special considerations advanced in justification of such expenditure, or any general considerations which would apply to all hospitals having medical schools.

"It is an instruction to the Committee to deal with the subject on the basis of existing arrangements, and to accept from the hospitals as existing arrangements

any such as they may advise the Committee will be in operation on January 1st, 1905."

The circumstances which led up to this enquiry were no doubt three-fold :—

(1) The Antivivisection League for eight years had been protesting against the hospitals granting subsidies to their associated medical schools, solely and entirely on the ground that the practice of vivisection had been carried on in the medical education given in some of these schools.

(2) Certain vague statements and arguments, founded on the increase in the population of London in receipt of hospital treatment, out of proportion to the increase in the whole population of London ; and which increase has been attributed to the action of the medical staffs of hospitals with schools attached to them.

(3) An appeal from an anonymous donor (who had offered, on certain conditions, a gift which would have increased the permanent income of the Fund by £4,666 a year) to the Prince of Wales, asking that as President of the King's Fund His Royal Highness would endeavour to prevent any of the Fund being diverted to medical education.

In replying to the first of the three questions submitted to them, the Committee have very clearly indicated the intimate and complex relations which have grown up between the hospitals and schools. They point out that in the year 1903—the last year for which the accounts were then complete—eight of the hospitals in their judgment made contributions, either directly or indirectly, or both, to the schools out of the funds of the hospitals. The eight hospitals were Charing Cross, the London, the Middlesex, St. Bartholomew's, St. George's, St. Mary's, St. Thomas's, and the Westminster.

In the case of Guy's Hospital and the Royal Free

Hospital the Committee doubt whether, in consideration of all the circumstances, the schools can be regarded as deriving any pecuniary benefit from the hospitals; but they have no hesitation in saying that no money given or subscribed to University College Hospital or to Kings' College Hospital was in the year 1903 contributed directly or indirectly by the hospital for the maintenance of medical education.

The Committee were not required to justify, censure, or condemn such contributions; but if we may read between the lines of several of the questions put by them to certain of the witnesses, the inference is that in the opinion, at any rate, of Lord Welby and the Chairman, aid given to the medical schools by the hospitals, under certain conditions, is not a diversion of the funds.¹

Their remarks are in complete accord with one's own experience of the wishes of donors to hospitals, whose object is that as much good as possible should be done for the afflicted poor. The application of the knowledge gained in the wards to the relief of the sick poor beyond the walls of the hospital, no doubt appeals as strongly to their charity and intelligent sympathy as the alleviation and restoration to health of the comparatively few who come within its walls.

Yet the Report makes no allusion to this aspect of the matter in replying to Question III. It seems to me however, to be one of the "general considerations applicable to all hospitals having medical schools," which might have been brought forward in justification of devoting some part of the funds of the hospitals to the needs of the medical schools.

Hospitals as the arena of medical education minister to the needs of the sick poor to a manifoldly greater

¹ See Minutes of Evidence: Questions 887, 931, 937, 932, 934, 936.

extent through the widely scattered medical practitioners who have been trained therein, than through the medical and surgical staffs immediately in charge of the wards and out-patients of the hospitals.

The founder of a well-known Paris journal is reported to have said that a carriage accident in the *Rue Tronchet* is better "news' copy" than an earthquake in China. What M. Villemessant meant to imply was, of course, that human nature is much more easily affected and impressed by events which occur near by, than by those which happen at a distance; and that the readers of the *Figaro* are much more interested by what concerns their immediate neighbours, than by the misfortunes and afflictions of persons they have never seen, or previously heard of. But we need not take it for granted that every subscriber and donor to a hospital is under the sway of this natural apathy and unconcern for sufferers afar off; yet, unless it be so, we have no right to assume that hospital managers divert the funds entrusted to them for the relief of the sick poor, if they vote some portion of those funds for the maintenance and improvement of medical education.

A very important matter bearing both on the difficulties of the Medical Schools, and the supply of trained practitioners for the sick poor throughout the land, is the necessity of keeping the cost of medical education within the limits of moderate incomes.

The medical profession is chiefly recruited from persons of moderate means and moderate expectations; it does not attract many of the richer classes; the remuneration in some districts scarcely repays the qualified medical men, and to add to the cost of entry into the profession would tend to encourage irregular practitioners. Suppose the medical schools agreed on raising their fees to a figure

sufficient to adequately remunerate the teachers after paying all other expenses of upkeep, rent, service, &c., only the richer men could enter the profession. Then this would happen: the very poor and the paupers would be unable to obtain medical aid owing to the reduction in the number of medical men. There would arise the outcry that the poor were allowed to die of curable diseases for want of proper advice and treatment; and the State or the ratepayers would have to subsidise the existing medical schools to induce them to lower their fees, or would be obliged to establish medical schools of their own. Possibly the State would have to educate doctors for poor law and club practices, just as it provides the professional education of naval and military officers, the training of school teachers, and quite recently the instruction in tropical medicine of Colonial medical officers. The untoward consequences of making the fees for medical education high enough to enable the schools to continue to be self-supporting (even after the remuneration of the teachers had been reduced in many instances to a vanishing point) have never been lost sight of by the committees of the medical schools. None know better than they that "there can be no doubt of the desirability in the largest interests of the public, of rendering medical men of high character and of good professional capacity, generally accessible to all classes of the population."¹ Nor could any stronger reason than this be given why the deficits of the medical schools should be made good by external pecuniary aid.

But the medical schools have been reproached with the statement that competition for fees has reduced them to the position of having to seek assistance from the funds of the hospitals.

¹ The *Times* leading article, February 1, 1905.

A keen critic of hospitals has asked "I am going to put a boy, say, into the medical profession, and I want to pay his fees. Why should I not pay his fees? Is it not a dreadful thing to be told that my boy is to be partly educated out of money which was given by the public for the sick poor?"¹ For anyone having this scruple a donation of £100 or so to the hospital funds would put the matter right. But looking at the question from the point of view I have mentioned, I can see nothing dreadful in the position. Nor, apparently, did the Chairman of the "Medical Schools Committee," whose reply was "You must bear in mind that the greater part of the higher education in England is eleemosynary."

Medical education, however, until the last few years, has been an exception to the truth of this reply. Neither private benefaction nor public bounty has assisted it in London. Medical education is excluded from the list to which grants are made by the State. There is not, I believe, a single endowed chair in any medical school in London, except the Chair of Physiology in University College, and this has to be supplemented very largely to make the department effective.²

With regard to Question II. in the "Terms of Reference" to the Committee, the answer given in the Report is to the effect that the benefits arising out of the connection between the hospitals and medical schools balance one another. Some of the witnesses, and to one's surprise medical as well as lay, who gave evidence before the Committee, held this view.

It was asserted that the members of the hospital staffs make colossal fortunes; and that the students are provided

¹ "Medical Schools Committee," Q. 893.

² "Report of the Medical Schools Committee," Q. 175.

by the public with a "clinical laboratory," abounding in an enormous mass of "clinical material," for which they have nothing to pay, and which otherwise would have to be provided in a hospital built and maintained by the Medical School itself.

These are astounding statements. The advantages of hospitals to medical schools, of course, cannot be denied, but the foregoing argument is none the less illusory. It would be even more to the 'point to say that the advantages conferred on the Bench and Bar by the High Courts of Justice and those conferred on the Courts of Justice by the Bench and Bar about balance one another ; or that the benefits conferred on the Army and Navy by the country and those conferred on the country by the Army and Navy are mutual and equal.

It is surely grotesque to speak of the so-called "clinical material" in the light of an asset of the hospital in its account with the Medical School ; to liken this "clinical material" to a laboratory, and, as if it were a chemical or physical laboratory, to pit its value against that of the services rendered to a hospital by medical skill and science. The "clinical material" is not in the hospital to be bartered, but to be relieved and cured.

The reason of the existence of a hospital is to provide the best possible medical and surgical treatment for the sick poor. To this end there must be opportunities for clinical study on the part of those who are to combat disease. That proper use is made of these opportunities is, as Sir Arthur Rücker told the Committee, "a matter of the very greatest importance to the public and to the poor. . . . It is an integral part of the mechanism for helping the sick poor."¹

For years the hospitals had been the gainers by their

¹ Sir Arthur Rücker, "Medical Schools Committee," Q. 112.

affiliation with the schools, without having to pay a single farthing in return. Sir Isambard Owen, in his interesting oration last year, said that he had estimated that the existence of the Medical Schools virtually added no less than £50,000 a year to the charitable resources of London, and that he had not been accused of exaggeration.

But be that as it may, can one imagine such a state of indifference to the public weal, or such injustice to individuals, on the part of hospital managers, as to suppose them capable of closing their doors to medical teaching, or of attempting to make something for their hospitals out of the "clinical material" and the fees paid for clinical instruction?

Let us take the case of the fees paid by students attending hospitals supported by rates. What becomes of them? Students have to produce a certificate of having attended a three months' course of practical instruction at a hospital for infectious diseases; candidates for a diploma in public health, a certificate of having attended during three months the practice of such a hospital, and of having done so with the opportunity of studying also the methods of administration. These requirements of the General Medical Council are met by the Metropolitan Asylums Board arranging for students' classes in the wards, and providing a limited number of resident clinical assistantships.

The clinical assistants get their board and lodging free, their services being considered as the equivalent. The fees paid for instruction go as to two-thirds of them to the Senior Medical Officer, and as to one-third to the Metropolitan Asylums Board to pay expenses for use of waiting-room, service of porter, printing notices and certificates, &c.

These hospitals being statute-ruled, the Asylums

Board have to guard against the possible imputation that any part of the cost of medical education is charged to the rates; but they make no tax on the use of the "clinical material."

This arrangement surely is of itself a practical admission that it is those who do the teaching, not the hospital which masses the "clinical material," to whom the students and the schools are indebted.

Moreover, students go to a medical school, not because of the hospital, but because of the traditions and renown of the school, or because of the repute of this or that member of the Staff. Take away from the hospital the distinction given to it by the school traditions, and by the reputation of the Medical and Surgical Staff and other teachers, and the whole character and importance of the hospital would be changed.

I have said enough, I hope, to show that the Report of the Committee does less than justice to the medical schools by saying that the mutual benefits of the hospital and school "may be fairly set off the one against the other."

But the Committee further say: "The evidence satisfies us that the expenses incurred in hospitals with schools are generally in excess of those in hospitals without schools." Figures have been produced by Sir Henry Burdett to show that a medical school adds from 15 to 25 per cent. to the total cost per bed, as compared with the cost per bed in the hospitals without medical schools.¹ It came out, however, incidentally, in Sir Henry Burdett's own evidence before the Committee, that a medical school was not invariably or necessarily associated with a higher rate of expenditure;² and Mr. Martin White in the *Times* of

¹ Year Book, 1905, and the *Times*, Feb. 1, 1905.

² The Minutes of the "Medical Schools Committee," Q. 845, 847, 848 to 853.

March 18 last, has proved, by a comprehensive tabular comparison of thirteen Scotch, provincial, and London hospitals, that the cost of management is not increased by medical schools, but that many of the provincial and Scotch hospitals with medical schools are worked quite economically.

The Report of the "Medical Schools Committee," besides replying to the three questions of reference, contains a *recommendation* as to moneys contributed to hospitals in future; and also some remarks on "*certain matters*" which came before them in the course of their enquiries, and which they considered to be closely connected with the subjects of reference. The recommendation is—

"That the distinction between hospital and school should in every case be drawn, not only definitely and exactly, but with such clearness that it may be understood by the general public, and so that no question may arise as to the destination and application of moneys contributed, whether by the King's Fund or from any other source."

As a result of this recommendation, the General Council of the King's Fund have notified to the hospitals "that no grants will be made from the King's Fund as from and after January 1, 1906, to any hospitals which make payments to, or on account of, their medical schools out of general funds subscribed for the relief of the sick poor."¹

As a matter of fact, the grants from the King's Fund to the hospitals with medical schools are but a very small part of the incomes of those hospitals; and the actual contributions to the schools out of the hospital funds form

¹ The *Times*, April 14, 1905.

but a very small fraction of the expenditure of the hospitals. Thus in the case of the Middlesex Hospital, the annual grant from the King's Fund is about £2,000; the annual expenditure of the hospital is between £34,000 and £40,000, and the largest contribution made in one year out of the hospital funds towards the school is £965 8s. 11d.,¹ or less than 3 per cent. of the total expenditure.

St. Mary's Hospital, with an annual expenditure of about £32,000, receives from the King's Fund about £2,000 a year; the amount given to the school out of the general funds of the hospital in 1903 was £652.¹

St. Thomas's Hospital, with an annual expenditure of £62,000, does not receive a grant from the King's Fund every year. The grant in 1903 was £1,800; the amount paid for or to the school out of the hospital funds was £1,253 3s. 11d.,¹ or a little over 2 per cent. of the total expenditure.

The hospitals naturally wish to stand well with the King's Fund; and besides, it is not only the loss of the grants from the King's Fund with which the hospitals which assist medical education out of their general funds are threatened; but the grants from the Hospital Sunday Fund—which in the case of the Middlesex Hospital and St. Mary's Hospital, are somewhat larger than those from the King's Fund—will also, no doubt, be discontinued. At the last two annual meetings of the Metropolitan Hospital Sunday Fund, resolutions were moved to the effect that no grants should be made to hospitals which contribute to the support of medical schools, or laboratories, from their general fund. Although on each occasion the

¹ These contributions from the several hospitals to the medical schools are the sums in money actually paid over by the hospitals for or towards the school expenses.

resolution was withdrawn, there is every reason to believe that at the next annual meeting the example set by the King's Fund will be followed by the Hospital Sunday Fund.

It is to be hoped, therefore, that those hospitals which have hitherto assisted their medical schools, and which do not feel justified in foregoing the grants from the King's Fund, will at once establish a "Medical School Fund" which can be used, at the discretion of the governing body of the hospital, for the requirements of its medical school; and also that those who are interested in securing the wider range of good done to the sick poor by the medical profession, than that confined within the actual limits of a hospital, will use their efforts to support such separate fund.

At the London Hospital a discretionary fund—that is, a fund to be used in part or in whole, at the discretion of the Committee of Management, for either hospital or school—has, in fact, already been opened; and within a week of its being started, the amount transferred to it by the subscribers was more than twice the amount ever contributed to the school by the hospital.¹

There is no reason to doubt that similar generosity towards the other medical schools will be shown by the supporters of the other hospitals, and that a response will be made to the claims and the needs of the schools if these needs are made widely known by the establishment of a separate and distinct fund.

The two "*certain matters*" as to which the "Medical Schools Committee" record their impressions are (1) The broad line of distinction drawn between the studies of the first three years of the medical student's curriculum, and

¹ The *Times*, March 24, 1905. Letter from Lord Stanley.

those of the last two years ; and (2) the effort now being made on the part of the University of London to concentrate the teaching of the preliminary and intermediate subjects of the medical student's curriculum, and as to which the Committee express their "great satisfaction." The Committee consider that "the earlier studies have no real relation with a hospital, and are therefore more properly to be pursued in an institution of a University character."

Probably the Committee inferred that the instruction to the Senate by the Statutory Commissioners of 1898 is in accord with the views of the whole of the 350-400 members of the Medical Faculty of the University. The Committee, however, do not seem to have been informed that the average attendance at the meetings of the Faculty is only forty-five ; that only forty-eight members were present at the meeting when the reply of the Faculty to the enquiries of the Senate of February 19, 1902, with regard to the proposed Institute of Medical Sciences, was passed ; and that it is doubtful whether one-fifth of the members have ever attended a single meeting, or know what takes place at the meetings, of the Faculty.

It is the teaching of the preliminary science subjects *only*, of which the medical schools ought to be relieved. This is the burthen which, especially since the coming into force in 1892 of the five years curriculum, the schools have found it so difficult to bear,—under which, in fact, they have broken down. These are the classes which, as arranged for medical students alone, have never paid, and which even at University College and King's College, where the departments of chemistry, physics, botany and zoology are departments of the faculty of science as well as of that of medicine, are the most expensive and costly in the Faculty of Science. Even at these two colleges, in

spite of endowments, grants from the Treasury for science teaching, and from the London County Council, it is extremely difficult to make these classes pay their way.¹

Melbourne and Sydney, I am told, have had the same experience as the London Colleges in regard to the unprofitableness of teaching preliminary sciences in medical schools. The proper relief from this burthen is to require that these courses of study should be taken, and closed by passing an examination in them, before the students are allowed to count the commencement of the medical curriculum.

Huxley, in a Memorandum to the Senate of the London University, said: "that the student ought to have acquired, as part of his general education, such knowledge of physics, chemistry, and elementary biology as is now demanded of him."² The General Medical Council and the two Royal Medical Colleges in London have approved in principle of these subjects being treated as matters of preliminary scientific education, and of an examination being passed in them after the examination in general education, and before the commencement of medical studies proper. The mistake has been in allowing students to count any part of the time spent at a medical school before having passed the examination in preliminary science.

There would be no difficulty in students getting instruction in these subjects if the medical schools gave up teaching them. At present many intending medical students take out their courses in chemistry, physics and biology before leaving school; most of the good secondary schools in England now have science departments, and many have been inspected and found thoroughly efficient

¹ Foster: "Medical Schools Committee's Report," p. 31. Headlm: "Medical Schools Committee's Report," p. 81-83.

² See Minutes of Evidence "University for London Commission," 1889. Q. 1,079, p. 99-100.

by the two Royal Colleges. In fact, the Colleges have given encouragement to secondary schools in this direction.

Other places of instruction would soon become available. The Birkbeck Institution has a considerable reputation. At South Kensington, and at various Polytechnics and Municipal Institutions, the teaching of the preliminary sciences is excellent in its way, and if not at the present moment quite suitable for medical students, would no doubt soon become so if the teachers were encouraged to hold special courses for intending medical and dental students; and it would well pay them to do this. Examinations in these subjects could be held at the Examination Hall and elsewhere, as now; or as an alternative a "leaving school certificate" might be accepted.

For the preliminary scientific examination for the degrees of M.B., and B.S., of the University of London, the classes at University College and King's College would still be available. Epsom College also sends up many boys who pass this examination straight from school.

One important reason why the Departments of Chemistry and Physics and Biology have been so great a burden to the Medical Schools is that they have to be maintained in a thoroughly efficient state with a view to the teaching of those subjects up to the standard of the Preliminary Scientific Examination of the University of London, and whilst the Schools thereby incur considerable expense, they do not receive the fees of all their students for the teaching of these subjects. This is due to the Regulations of the University and of the Royal Colleges which permit of the courses of instruction in Chemistry, Physics and Biology being taken elsewhere than at a Medical School. In a very considerable number of cases this permission is taken advantage of, so that when these students come to a Medical School they claim exemption from the payment

of the fees allotted to those subjects. This is not the case with Anatomy and Physiology, in which subjects all students must receive instruction at a Medical School and pay the fees for these subjects.

Indeed it is altogether different with regard to Anatomy and Physiology. They are the corner stones of the foundation of scientific medicine and surgery, and as such are not to be relegated to the limbo of the neglected or forgotten, after having been studied for two winters and a summer session. The dissecting rooms and the laboratories should be easy of access to the student throughout the whole period of studentship. A conference with the teacher of anatomy or physiology on a difficult or doubtful point, is not unfrequently, of much assistance to a surgeon or physician of the hospital. Whatever may be the case with physiology, it will be quite impossible to entirely banish anatomy from the proximity of the schools attached to hospitals. Provision must always be made thereat for teaching surgical anatomy, and for operations on the *cadaver*; and proper facilities to dissect must be given to senior men who are going up for such examinations as the Fellowship of the Royal College of Surgeons.

Those who advocate the concentration of teaching in these subjects at one or more centres away from the clinical schools, affirm that "owing to the widening of the scientific basis of medicine and surgery, and to the increasing attention given to the teaching of these scientific subjects, it has become necessary to entrust these subjects to teachers exclusively occupied with them."¹

This statement contains in itself one of the strongest reasons for not allowing the teaching of anatomy and

¹ An appeal by the Senate for funds to endow an Institute of Medical Sciences.

physiology to pass entirely under the control of pure anatomists and physiologists, as it would do at central schools presided over by professors in these subjects.

There is wisdom in providing for what is essential, rather than for what is superfluous. It is possible to have a "basis" so wide as to be out of proportion to the structure reared upon it. It is possible to teach a subject as if the knowledge of it is the end in itself, instead of a means to another end. In the teaching of physiology to medical students there has been a great tendency in this direction, and the tendency would have become an actual reality had the examining bodies not kept a tight hand on the physiology examiners. But though the professors at centralised schools (who would be also the examiners), would themselves be exclusively occupied with their subject, the demonstrators, who would do the bulk of the teaching, would not be so any more than they now are; but would take up the teaching, as they do at present, "as affording temporary occupation prior to entering upon other and more remunerative work elsewhere"—in other words, whilst waiting for hospital appointments. The demonstrators, however, would be under the disadvantage of having to spend the greater part of their time at the teaching centre, miles away from their hospitals, and would not be able to keep so closely in touch with clinical and pathological work as they do now, except at considerable expense and loss of time in travelling to and fro. The distance of the University at Kensington from the Hospitals and from the residences of the teachers was considered by the late Dean to be an explanation of the scanty attendances at the meetings of the Medical Faculty—few and far between as they are. What a great drawback, therefore, would the distance be to those who would daily have to go to and fro from one place of occupation to the other.

Concentration, too, has its disadvantages in the case of sciences which have to be learnt largely by the student's own manual efforts; and have to be taught by direct demonstration to the individual student, as well as to classes, or by lectures. Moreover, all young men are not alike as to the conditions under which they can work best. Many prefer to go to, and work better at, a medical school where there are but few students. As to the personal preference of the students themselves there are few, if any, amongst past and present students who are not glad that their own student-days arrived before any scheme of concentration could keep them for three years at a central Institute, away from the hospital of their selection.

It is said that the present system of teaching Anatomy and Physiology in twelve centres in London is at once "wasteful and inefficient." I shall be able, I think, to show that neither of these charges is justified.

The objection, on the ground of inefficiency, to anatomy and physiology being taught by those who are looking, not to teaching these subjects, but to practising as surgeons and physicians, as their principal work in life, ought to be silenced by recalling the names of some of the past teachers. To mention only some few who are deceased, let us take for instance, Moxon and Hilton Fagge, who were demonstrators of anatomy at Guy's; or Kirkes, Savory, and Marrant Baker, who were teachers of physiology at St. Bartholomew's, or George Murray Humphry, the author of "The Human Skeleton," and of Treatises on the "Limbs of Vertebrate Animals," &c.

One of the best teachers of Anatomy of his day was John Hilton, whose admirable dissections, copied in wax by the late Mr. Towne, are some of the chief attractions in the Guy's Hospital Museum; and whose classical work on "Rest and Pain" is a monument of anatomical

knowledge applied to the elucidation of obscure surgical affections.

Sir Charles Bell—of whose work Müller, the great German physiologist, said, “The discovery of the circulation of the blood by Harvey and the discoveries of Sir Charles Bell on the nervous system are the two grandest discoveries that have ever been made in physiological science”—taught anatomy and physiology at a medical school at the same time that he was one of the surgeons of the Middlesex Hospital, and was engaged in a considerable private practice as a consulting and operating surgeon. Towards the end of his London career, Sir Charles Bell, whose pride, as he said, it ever was “to join the pursuits of science with practice,” helped largely in establishing the medical school of the Middlesex Hospital, and gave the first series of lectures on anatomy and physiology in that school.

Then followed in the same chair, Alexander Shaw, Bell’s friend and assistant, a good anatomist and the author of some excellent treatises on surgery.

Erasmus Wilson came after Shaw. His devotion to anatomical and physiological teaching, and to writing “The Anatomist’s Vade Mecum”—the popular text-book with students of that day—did not prevent him becoming the leading dermatologist of this country.

Campbell De Morgan and Charles Moore, both surgeons to the Middlesex Hospital, have graven their names conspicuously into the history of the modern operative treatment of cancer, by work they did whilst teaching anatomy at the same time. De Morgan for nineteen years taught also physiology, and, conjointly with the elder Tomes, has left his name indelibly recorded in the *Philosophical Transactions* (1853) by their memoir on “The Structure and Development of Bone.”

Sir William Flower, the late Conservator of the Hunterian and then of the Natural History Museums, in the earlier part of his career was assistant surgeon to and teacher of Practical Anatomy at the Middlesex Hospital. During this time he produced those excellent charts of the nervous system which have been of great assistance to many generations of students, and laid down the foundation of his work on Craniology.

J. W. Hulke taught Physiology and made an important contribution on the "Anatomy of the Retina."

The late Arthur Hensman, who for several years demonstrated and lectured on Anatomy at the Middlesex Hospital Medical School, was also surgeon to the Throat and Ear Department of the Hospital. He was an admirable draughtsman and a most successful teacher of Anatomy.

This is no mean list of distinguished teachers at one school, and that one of the smaller ones, since 1835. It would be easy to mention many others, living as well as dead, who have brought renown to their respective schools in the double *rôle* of teacher of Anatomy or Physiology, and of Surgeon or Physician to the hospital to which the school is attached.

The arrangements at Cambridge University are sometimes urged as an example in support of separating the place of the intermediate science teaching from the medical schools in connection with the hospitals. But it is an example, in my opinion, not to be followed. Several Cambridge men, as it is, come to London for their Anatomy, and from what I hear are well pleased at doing so. At any rate, it is quite certain that medical undergraduates at an Institute at South Kensington will not reap the advantages attending a residence at Oxford or Cambridge—advantages which perhaps go some way to

compensate for the delay in joining a medical school immediately attached to a hospital.

Nor can the conditions which exist in the provinces or in Scotland be compared with those in London. The amalgamation of a Sydenham College attached to the General Hospital, with the Queen's College in connection with the Queen's Hospital, into a Medical Faculty of the Birmingham University; or the combination of the separate hospitals and colleges of Liverpool into a Liverpool University, is quite a different thing to concentrating the preliminary and intermediate science teaching of the separate schools of medicine in London.

In the case of the Durham undergraduates in medicine, their instruction in the preliminary sciences, as well as in anatomy and physiology, is given at Newcastle, in College buildings quite close to the Royal General Infirmary of Newcastle, which is the clinical hospital for the medical students of Durham University. It would be no less reasonable for the Durham University to insist on the students of the medical faculty doing their anatomy and physiology and other science courses at Durham, which is seventeen minutes by train from Newcastle, instead of at Newcastle, than it would be to require the London medical students to attend these courses, far away from their several hospitals, at South Kensington.

The fact is that London, from its vastness of area and of population, has, and requires, not one medical school but several. The London system differs, it is true, from that of Edinburgh and the provinces, as well as from that of Paris, Berlin, Vienna and other continental cities. But the educational work it has accomplished, the well-trained practitioners it has turned out, its contributions to science, and its discoveries in diagnosis and treatment, have not been surpassed by those of any medical centre in the

world. London has cause to be proud of her medical schools, and in the interest of the hospitals, of the sick poor, and of the whole community, she will do well to make a great effort to retain them.

Sir Edward Fry's Committee has amply pointed out how great are the benefits which the hospitals derive from the medical schools. This being also universally admitted, why take steps to concentrate the teaching of anatomy and physiology at a few centres, when the probable result will be the deterioration, if not the actual extinction, even as places of clinical instruction, of at least three or four of the existing medical schools.

It cannot be said that there is a preponderating desire on the part of the schools to be rid of the teaching of these subjects, because in the answers given in reply to a Memorandum issued in 1901 by the Faculty of Medicine, only four out of the twelve schools gave an unqualified assent to the concentration of anatomy, and only five to that of physiology,—and this, in spite of their financial difficulties.

With regard to the scheme for establishing an Institute of Medical Sciences in South Kensington, it is interesting to recall how the idea of it came about.

In the latter half of the eighties of last century the medical teachers in London took alarm at the decrease in the annual entries of medical students in London, so they joined University College and King's College in the demand for a teaching university which was to grant medical degrees on easy terms. In their anxiety, they quite ignored the fact that, as to its Medical Faculty, the University of London was, and had always been, a teaching university; that by its Charters (Clause 37) it required evidence of study completed in accordance with regulations determined by the Chancellor, Vice Chancellor and Fellows; that the courses of study were laid down by the

Senate after communications and conferences with colleges, professors, and examiners; and that these courses had to be taken at certain medical institutions recognised by the Senate. In other words, the London University only admitted to its degrees in medicine and surgery, such persons as had followed a curriculum of its own planning, at institutions of its own approval. It thereby controlled medical teaching as well as examinations; and the institutions approved, became *de facto* constituent parts, or affiliated colleges of the University. Such a university is no less a teaching university than a boiler maker living at Greenwich, whose capital is raised by syndicate, and whose workshops are scattered at Erith, is any the less a boiler maker because there is no hammering going on at his home premises. But the Gresham University scheme failed, and in its stead the existing University of London was altered in 1898 by Statutes. Still there was no prospect of a London M.D. degree on terms to suit the general run of students, so a sop was thrown to Cerberus by the Statutory Commissioners, who reaffirmed the opinion of the Gresham University Commissioners (1894) that in certain groups of studies concentration ought to be effected; but they did not feel justified, however, in framing statutes to give effect to this opinion, because they found from representations made to them on behalf of the medical schools a want of such consensus of views as enabled them to do so. They therefore laid down the following instruction: "The Senate shall use its best endeavours whenever practicable to secure such common courses of instruction for internal medical students in the preliminary and intermediate portion of their studies under appointed or recognised teachers at one or more centres."

These words are a part of the unfortunate and now notorious Statute No. 80—a statute which threw medical

education in London into a state of distraction, and has kept the teachers in a state of paralysing uncertainty ever since, and which, because it has been quoted by Sir Edward Fry's committee "with great satisfaction," is on the eve of causing a considerable crisis.

The same statements which were used to advance the Gresham University as a teaching University granting easily attainable degrees, are now being employed to bring Statute No. 80 into being in the form of the proposed Institute of Medical Sciences of the London University. The Institute, we are told, is necessary "for the improvement of medical teaching," to "restore London to the place it once held as a great centre of Medical Education," and to provide "a really great Metropolitan School." The preliminary and intermediate subjects, it is said, are now being better taught in the Provinces than in London, with better apparatus, and by better paid teachers; whilst competition between a great number of little schools is destroying medical education in London and injuring the London hospitals by a clear diversion of the funds.¹

A fact is not created by affirming that it exists; but experience has shown that it is possible to go on saying the thing that is not, so often, that at length one actually comes to believe it to be the thing that is; and one may even go a step further, and repeat it again and again, until one induces other people to believe it too. But the answer to the above fictitious statements is to be found in the evidence of the Principal of the University of London.² Sir Arthur Rücker told the "Medical Schools Committee" that "to compare the Medical Faculty of the University of London with the Medical Faculty of any other University whatever, is really to compare two things which are in

¹ Minutes of Evidence, "Medical Schools Committee," Q. 894.

² Minutes of Evidence, Q. 112.

different orders of magnitude. Few, if any, provincial towns have more than one great hospital, and possibly a good dispensary. Here we have twelve great medical schools, of which the principal ones are superior—at least—equal to those in any of the provincial towns.”

The real origin of each of these movements (the Gresham University and the Institute) was the desire on the part of the London teachers to bring back, if possible, the medical students to London, and, failing that, to be rid of the burdensome expenditure on the teaching of the earlier subjects of the curriculum.

The position, however, is not that Medical Education in London has not been kept up-to-date, but that the education in the provinces has made such great strides. In the beginning of the decline of the London entries it was cynically said “that the medical education of the country was year by year being injured by the drawing away from London of a large number of students who will go where they can get a degree, even if they cannot get the learning, and that that ought to be remedied at almost any cost.”¹

But provincial colleges have become provincial universities; local munificence has richly endowed them; large hospitals and infirmaries are in their immediate neighbourhood, and thus, all the requirements of a good medical school are combined. Rich in the fulness and variety of clinical material, they have also ample funds for teaching the preliminary and ancillary sciences as well.

These universities can now impart “the learning” as well as give “a degree,” and the cynics, therefore, should no longer wonder that many students, loving country life

¹ Quoted in Lord Justice Fry's evidence before the (1888) Royal Commissioners, p. 99.

and finding near at home the opportunity of getting *both* the professional training and the university degree, prefer to enter at the provincial universities. Nor is it surprising that their guardians or parents prefer sending them there, rather than to London where they are far away from home influences and surrounded by the distractions and temptations of a great metropolis.

When will the London teachers realise that this condition of things has come to stay? A jealous coquette does not impair the charms of her rival by vainly striving to improve her own. Nor will any efforts to increase the attractions of the London medical teaching detract from those possessed by the provincial universities.

It is a matter for surprise that Sir Edward Fry's committee should have gone so far beyond the "terms of reference" to them, as to express satisfaction at the University of London scheme of concentration.

It is a significant fact that the first questions of the Bishop of Stepney to the first witness who came before the Committee, distinctly postulate the advantages claimed for it. But one's surprise centres around the attitude of Sir Edward Fry. If we refer to the Blue Books of 1889 and 1894, and carefully peruse the evidence given by Lord Justice Fry in 1888 and by Sir Edward Fry in 1892, we find that, though favourable to some inter-collegiate arrangement on the part of the smaller medical schools for teaching the subjects of the preliminary scientific examination of the University of London, he was a strong and persistent opponent of placing the whole teaching in London under one control; that whilst he desired to maintain competition between the colleges in a university, he expressed himself resolutely against the ill consequences of competition between universities; that, though in favour of a university controlling teaching by inspecting

and reporting on teaching bodies, he was opposed to the university itself doing the teaching ; and he quoted with approval, and at great length, from an address by Professor Chrystal, of Edinburgh, as to the drawbacks and dangers of the universities competing with the secondary schools for work which the schools can do as well as, or even better than, the universities can.

It was not therefore to be expected that we should find Sir Edward Fry now viewing with satisfaction the proposal of the London University to do all those things, which, ten years ago, he thought so harmful, namely, to compete not only with the provincial universities, but with the medical schools which stand aloof from the concentration scheme, and with the secondary schools.

Now as to the charge of *wastefulness* which has been brought against the present system, more especially by the enthusiasts of the London University Institute scheme.

It was told in evidence to the "Medical Schools Committee" that in 1901 there were between eighty and ninety teachers for 1,250 students of anatomy and physiology, at the eleven medical schools of London, and that "the amount of money which was expended in salaries alone, for the teaching of those subjects, was more than £10,000 a year."¹

If we compare these figures with those put forward by the University of London, we find that the Senate is appealing to the public for £375,000 for building, equipping, and endowing the Institute. (The estimate of the Committee of the Senate was £40,000 more, viz., £415,000). The total annual cost of maintenance is estimated at £23,500. One hundred thousand pounds is to be spent on building and equipping the anatomical and

¹ Minutes of Evidence. Q. 684.

physiological work-rooms. The salaries of the teachers of anatomy are set down at £5,000 a year, those of the teachers of physiology at £5,500 a year, *i.e.*, £10,500 for the teachers of these two subjects. The proposed numbers of teachers of anatomy and physiology are nine professors and twenty-four assistant professors and demonstrators. The number of students to be provided for is 500. We see, therefore, that thirty-three teachers and £10,500 a year for salaries, are the requirements by the University for 500 students. Now thirty-three teachers for 500 students are in the same proportion as eighty-three for 1,250 students, and £10,500 as salaries for teachers for 500 students are in the same proportion as £26,250 for the teachers of 1,250 students ; so that whilst the proportion of teachers is practically the same, the amount paid in salaries for instructing 1,250 students at the eleven separate medical schools is at the rate of £16,250 a year less than the salaries proposed to be paid for 500 students at the University Institute.

If to this be added the interest on the £100,000 sunk in buildings and equipment for the anatomical and physiological sections of the Institute, and the dead loss to the existing schools if buildings, plant, and ground space now covered by the present dissecting rooms and laboratories, be thrown out of use, there is no difficulty in seeing that the charge of wastefulness recoils with greatly added force upon those who have made it.

The University of London, as yet, has neither the site for the buildings, nor more than a fraction of the sum wanted to build and endow. Even if both these needs were satisfied, four or five years at least must elapse before the Institute could be in working order ; and if the existing medical schools, or some of them, should find it necessary to close their doors from and after 1906, when

the decree of the Council of the King's Fund comes into force, medical education in London will be cast between the devil and the deep sea. The lot of the students will be like that of the children whose governess, thinking they ought to have a change of playthings, threw away the old toys before she could provide the new, with the result that the poor children were left with nothing to play with.

Any system which keeps a medical student away from the hospital for three years out of the five, ought to be absolutely condemned. When the four-year curriculum was lengthened, the intention was to add a year for clinical work, but somehow the preliminary science teachers and the physiologists, have been allowed to appropriate it. The final two years are consequently overladen; the students complain that too much of their time is given up to preliminary studies, and too little to acquiring a knowledge of the main work of their lives; and medical practitioners all over the country complain that the recently qualified assistants are very badly up in their practical work. A long experience as a lecturer and an examiner, has convinced me that these complaints are well-founded.

In Germany, where the students commence to follow the "clinics" in the latter half of their second year, the authorities have become convinced that the teaching under the five years' system is not adequate to the needs of medical practice.

Since 1900 loud voices have been raised, pointing out that the education was too theoretical, and in 1902 the matter was taken up by the Prussian Minister of Education, with the result that new regulations coming into force in 1906 require a sixth year, which is to be spent entirely in clinical study, and in holding hospital appointments. Hospitals with over 100 beds, not previously connected with medical schools or universities, are to form "Academies" for this purpose.

With us in London, the remedy is not exactly to add a sixth year to the medical curriculum, but to relieve the curriculum of subjects which ought to be required as part of a liberal education before entrance on special medical studies.

If the preliminary sciences were made to form part of school education, the whole of the last three years or more could be devoted to clinical work, and the other advanced medical studies; and the University of London could withdraw with grace from an attitude of rivalry with the secondary schools, and from the attempt to run a day school at South Kensington for teaching medical undergraduates in their first year, the elements of chemistry, physics, and biology.

There would still however, be room for an Institute of Medical Sciences in connection with the University of London; for University courses of lectures on important subjects not taught elsewhere; and for post-graduate instruction in the higher grades of medical and non-medical subjects.

Courses of lectures and professorships might well be established in the subjects specified by the Statutory Commissioners, namely (*a*) law, as a science, and as a part of a liberal education; and (*b*) the theory, practice, and history of education.

The philosophical study of the principles which underlie all systems of law, would, as the Commissioners pointed out, be of great value, not only to the professional lawyer, but also to diplomatists, Colonial governors, magistrates, and others who have to administer the law; whilst a course, or courses of lectures on pedagogy, would be of the greatest service to those engaged in secondary teaching, as well as to those in training to teach in elementary schools.

The subjects which come within the purview of an Institute of Medical Sciences in connection with a University, in which professorships and courses of lectures are wanted, are comparative anatomy and biology; biology of living organisms known to cause disease, *i.e.*, biology in relation to pathology; the more advanced branches of general physiology, physiological chemistry, and experimental psychology; tropical diseases; and the application of bacteriology, to testing articles of food, and to the microparasitic diseases of domestic animals.

Medical men and others going to the Colonies or to the Tropics, would be glad of some knowledge of Texas fever, tsetse fly disease, surra, and African horse sickness, &c.; and those at home and abroad would like to know more about the organisms swarming around us, and which affect the health of man, and cause devastation amongst cattle

But the most pressing need is adequate provision for scientific research, and adequate accommodation for training future research workers. Men are required who possess the technical skill necessary to make independent investigations in any part of the Empire. There are many important problems waiting to be unravelled by investigators efficiently trained.

The field for research is wide enough and varied enough, but the opportunities of learning *technique* and gaining skill therein are insufficient; and in consequence the skilled labourers are few.

The University of London could do nothing of greater scientific usefulness, nothing likely to be more beneficial to the public, nothing more becoming its own position and reputation as the greatest Medical University, than found an institute of medical science for training research workers. This might be done by the University

alone, or conjointly with the two Royal Medical Colleges ; and either by means of State aid, and help from the Royal Society, or by means of funds raised through private liberality and patriotism.

There would thus come to be a supply of trained workers whose services would be available when required by Government, or by commercial and industrial companies, for original research work, either abroad or at home. The Professors at the Institute would conduct research work both of an independent and of a check or corroborating character ; to them would no doubt be referred questions of difficulty, doubt, or differences of opinion.

They might also initiate, assist, or co-ordinate researches conducted elsewhere with the consent and goodwill of the authorities of institutions—as, for example, at hospitals having specially favourable or extended fields for observation, or study, of special diseases. Questions concerning tubercle, cancer, infectious diseases, tropical diseases, mental diseases, and diseases of the general nervous system, might thus be helped to a solution.

Such an Institute for Scientific Research would be a crowning distinction to our University, and would serve as a training ground, and indirectly as a source of future income, for many of the ablest and most scientific members of the profession ; whilst the discoveries to which it would lead would be a means of improving the health and of increasing the prosperity of those living in disease-infested regions, and would in this way prove a blessing to the whole Empire and even to the world at large.

